



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/606,885	06/29/2000	Yuji Kuroda	SONY-T0850	7213

22850 7590 01/31/2005

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

PSITOS, ARISTOTELIS M

ART UNIT	PAPER NUMBER
----------	--------------

2653

DATE MAILED: 01/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/606,885

Applicant(s)

KURODA ET AL.

Examiner

Aristotelis M Psitos

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/26/04 & 1/3/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,8,9,11,12 and 60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,8,9,11,12 and 60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2653

DETAILED ACTION

Applicants' representatives' communication with the examiner on 1/3/05 indicated that the OA sent to applicant on 9/28/04 was in error. Applicants' representative previously left a telephone communication. The examiner assumes that the date of this telephone message was no later than 12/28/04 (within the 3 mn. SSP set by the previous OA). Affirmation of such a conclusion should be submitted along with any response to this OA. Hence in accordance with MPEP §710.06, the previous OA is withdrawn (vacated) and a new OA follows. Applicants' response of 8/26/04 has been considered with the following results.

Claims 1,8,9,11,12 and 60 are pending in the application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the

Art Unit: 2653

examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda et al considered with Honguh et al.

The following analysis is made:

Claim 1

Yasuda et al/Honguh et al

An optical recording medium used for a near

See abstract and discussion wrt

Recording and reproducing

field recording and the optical recording medium receives light via a side at which a transparent heat radiating layer is positioned to thereby perform at least one of recording and reproducing information, comprising:

a substrate;

substrate, (2)

a metal reflective layer formed on the substrate;

reflecting layer (3)

a first protective layer of Zn-SiO₂ formed on the metal reflective layer;

protective dielectric layers,
not specified as Zn-SiO₂

a recording layer formed on the first protective layer, the recording layer being made of a material undergoing a phase change and configured to change a complex index of refraction under said light;

phase change material
described, inherent config.

a second protective layer of Zn-SiO₂ formed on the recording layer; and

not specified as Zn-SiO₂

Art Unit: 2653

the transparent heat radiating layer formed on the second transparent layer (6) protective layer and having a heat conductivity higher than the second protective layer so as to disperse heat from the recording layer.

Although the above document indicates various materials for the dielectric – note the passages with respect to paragraph 160 plus, there is no clear depiction of the material noted.

Nevertheless, as taught by the Honguh et al document, such dielectric materials sandwiching the appropriate phase change recording material as stated in the Honguh et al document is well known.

It would have been obvious to modify the base system of Yasuda et al with the above teaching from Honguh et al, motivation is to use existing dielectric-phase changing materials already in existence and save the need to redesign production stages, i.e., use of previously established producing stages saves retooling. Furthermore, use of the Zn-SiO₂ dielectric material as opposed to that found in the primary reference reduces the overall complexity in production.

With respect to claim 60, the recording material is present in the secondary reference, as well as also established by the primary reference, see paragraph 64.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims 1 and 60 above, and further in view of Matsushita (EP 0626682A1).

With respect to the particular materials recited in the claim, Matsushita shows a heat layer of the particular material – see col. 5 lines 36-39.

It would have been obvious to modify the base references as relied upon above in paragraph 4 with the additional teaching from Matsushita, because one of ordinary skill in the art would have been motivated to add the material to the medium in order to ensure that heat due to irradiation with a laser beam is diffused to the plane of the substrate as taught by Matsushita (see col. 3, lines 4-7).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims 1 and 60 above, and further in view of Ueno et al.

Art Unit: 2653

With respect to claim 9, the ability of having a layered protective film structure in this environment is further taught by the Ueno et al document – see the description with respect to figure 3 for instance.

Ueno et al teaches obvious equivalent protective film structures including 1, 2, and 3 layers, each with their own capabilities. Selection of the number of protective layers is predicated on the amount of protection desired and an obvious selection in this environment.

7. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims 1 and 60 above, and further in view of Kikuchi et al.

The ability of having antireflection layers for their inherent use in this environment is known as further taught by the Kikuchi et al reference.

It would have been obvious to modify the base system as stated above in paragraph 4 with the above additional teaching from Kikuchi et al, motivation is to save valuable resources by using existing antireflection layer capabilities already established in this environment for their inherent uses.

8. Claims 1,8 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al further considered with Honguh et al and all with the acknowledged prior art.

The following analysis is made:

Claim 1

Yamaguchi et al

An optical recording medium used for a near field recording and the optical recording medium receives light via a side at which a transparent heat radiating layer is positioned to thereby perform at least one of recording and reproducing information, comprising:

see abstract/description

with respect to recording

a substrate;

see fig. 1, layer 1

a metal reflective layer formed on the substrate;

not present – see acknowledged

prior art (fig. 3). PLEASE

IDENTIFY

Art Unit: 2653

a first protective layer of Zn-SiO₂ formed on the metal layer 3, reflective layer;

a recording layer formed on the first protective layer, the phase change material recording layer being made of a material undergoing a phase described, inherent config. change and configured to chance a complex index of refraction under said light;

a second protective layer of Zn-SiO₂ formed on the recording not present the transparent heat radiating layer formed on the second protective layer 5 figs. 1 or 2. and having a heat conductivity higher than the second protective layer so as to disperse heat from the recording layer.

The above primary reference lacks the specific reflective layer (which is acknowledged by applicants' in their description of figure 3. Appropriate identification of such to complete the search report is respectfully requires.

The ability of using such is taught by the acknowledge prior art.

Additionally, the ability of sandwiching an appropriate phase change recording material of claim 60, and as further recited in the independent claim is stated in the Honguh et al document, see for instance col. 5 lines 1-26, motivation is as discussed in these lines.

It would have been obvious to modify the base system Yamaguchi et al with the above teachings from both the acknowledged prior art and Honguh et al, motivation is as stated in the Honguh reference above.

With respect to claim 8, the protective layer 5 is SiN as discussed in the primary reference to Yamaguchi et al and no further modification is required.

Art Unit: 2653

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims 1, 8 and 60 above, and further in view of Ueno et al.

With respect to claim 9, the ability of having a layered protective film structure in this environment is further taught by the Ueno et al document – see the description with respect to figure 3 for instance.

Ueno et al teaches obvious equivalent protective film structures including 1, 2, and 3 layers, each with their own capabilities. Selection of the number of protective layers is predicated on the amount of protection desired and an obvious selection in this environment.

It would have been obvious to modify the base system as stated above in paragraph 8 with the additional teaching from Ueno et al, because the examiner concludes that selection of alternative recording materials is considered merely a selection between equivalents, and predicated on such mundane engineering criteria such as cost, availability, reliability, etc. and obvious to one of ordinary skill in the art without any unexpected results occurring therefrom.

10. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to the claims as stated in paragraph 8 above, and further in view of Kikuchi et al.

The ability of having antireflection layers for their inherent use in this environment is known as further taught by the Kikuchi et al reference.

It would have been obvious to modify the base system as stated above in paragraph 8 with the above additional teaching from Kikuchi et al, motivation is to save valuable resources by using existing antireflection layer capabilities already established in this environment for their inherent uses.

11. Claims 1,8 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnuki et al further considered with Hirokane et al and Honguh et al.

Claim 1	Ohnuki et al
An optical recording medium used for a near	see abstract/description
field recording and the optical recording medium receives light	with respect to recording
via a side at which a transparent heat radiating layer is positioned	
to thereby perform at least one of recording and	

Art Unit: 2653

reproducing information, comprising:

- a substrate; see fig. 4, layer 56
- a metal reflective layer formed on the substrate; fig. 4, layer 55
- a first protective layer of Zn-SiO₂ formed on the metal reflective layer; layer 54, SiN
- a recording layer formed on the first protective layer, the recording layer being made of a material undergoing a phase change and configured to change a complex index of refraction under said light; phase change material described, inherent config.
- a second protective layer of Zn-SiO₂ formed on the recording layer; fig. 4, layer 52, SiN
- the transparent heat radiating layer formed on the second protective layer and having a heat conductivity higher than the second protective layer so as to disperse heat from the recording layer. protective layer 51 figs. 4

With respect to claim 1, the base reference to Ohnuki et al lacks the particular dielectric material as now claimed (Zn-SiO₂), and the transparent protective layer as SiN.

As is taught by the Hirokane et al reference, SiN also has a refractive index of 1.8 as does the refractive index used in the Ohnuki et al reference. Although Ohnuki et al further uses a carbon film, selection of another material known in this environment with the same refractive index is considered merely a selection of equivalent(s) because no unexpected results are seen to occur from such a selection.

Art Unit: 2653

Furthermore, the claim now recites a dielectric material composition of Zn-SiO₂, as opposed to the SiN dielectric material in the base reference.

Honguh et al teaches in this environment the appropriately claimed (claim 60) recording material sandwiched between two protective dielectric layers of Zn-SiO₂.

The examiner concludes that selection of appropriate materials for the recording layer (claim 60), as well as the dielectric materials Zn-SiO₂ is selection of alternative equivalent(s) material(s) and obvious to one of ordinary skill in the art especially since no unexpected results are seen to occur from selecting one material over another. The tri-layer of Zn-SiO₂ – GeSbTe – Zn-SiO₂ is known and use of such established layers is a selection between equivalent structures.

It would have been obvious to modify the base system of Ohnuki et al with the above teachings from Hirokane et al and Honguh for the reasons stated above.

12. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims 1, 8 and 60 above, and further in view of Ueno et al.

With respect to claim 9, the ability of having a layered protective film structure in this environment is further taught by the Ueno et al document – see the description with respect to figure 3 for instance.

Ueno et al teaches obvious equivalent protective film structures including 1, 2, and 3 layers, each with their own capabilities. Selection of the number of protective layers is predicated on the amount of protection desired and an obvious selection in this environment.

It would have been obvious to modify the base system as stated above in paragraph 11 with the additional teaching from Ueno et al, because the examiner concludes that selection of alternative recording materials is considered merely a selection between equivalents, and predicated on such mundane engineering criteria such as cost, availability, reliability, etc. and obvious to one of ordinary skill in the art without any unexpected results occurring therefrom.

13. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to the claims as stated in paragraph 11 above, and further in view of Kikuchi et al.

The ability of having antireflection layers for their inherent use in this environment is known as further taught by the Kikuchi et al reference.

Art Unit: 2653

It would have been obvious to modify the base system as stated above in paragraph 8 with the above additional teaching from Kikuchi et al, motivation is to save valuable resources by using existing antireflection layer capabilities already established in this environment for their inherent uses.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristotelis M Psitos whose telephone number is (703) 308-1598. The examiner can normally be reached on M-Thursday 8 - 4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2653

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aristotelis M Psidos
Primary Examiner
Art Unit 2653

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke at the bottom.

AMP